

1. (TWICE AMENDED) An arrangement for predicting an abnormality of a dynamic system and for implementing an action opposing the abnormality using an information flow that describes a development of a predictability of several future system states, comprising:

- Sub D1
- B2
- a) a measured data pick-up that registers comparison measured data of said system and test measured data of said system;
  - b) a processor unit, having a neural network that models said system, said processor unit
    - (1) training said neural network using said comparison measured data;
    - (2) determining a comparison information flow that describes a comparison dynamic of said system using said trained neural network;
    - (3) determining a test information flow that describes a test dynamic of said system using said test measured data;
    - (4) using said comparison information flow and said test information flow, predicting said abnormality as established when said comparison information flow differs significantly from said test information flow, and predicting said abnormality as not established when said comparison information flow does not significantly differ from said test information flow;
    - (5) when said abnormality of the system has been predicted as established, then implementing said action; and
  - c) an actuator that implements said action.

2. (TWICE AMENDED) An arrangement according to claim 1, wherein said processor unit endlessly loops from said determining a comparison information flow to said implementing said action.

16. (TWICE AMENDED) A method for predicting an abnormality of a dynamic system and for implementing an action opposing the abnormality using an information flow that describes a development of a predictability of several future system states, comprising :

- 13
- Sub D2
- a) measuring comparison measured data of said system and test measured data of said system;
  - b) determining a neural network that models said system using said comparison measured data;

- Sub D2
- B3
- c) determining a comparison information flow that describes a comparison dynamic of said system using said neural network;
  - d) determining a test information flow that describes a test dynamic of said system using said test measured data;
  - e) comparing said comparison information flow to said test information flow using said comparison information flow and said test information flow;
  - f) determining said abnormality to be predicted as established when said comparison information flow differs significantly from said test information flow;
  - g) determining said abnormality to be predicted as not established when said comparison information flows does not significantly differ from said test information flow; and
  - h) implementing said action when said abnormality of said system has been predicted as established.

17. (TWICE AMENDED) A method for predicting an abnormality of a dynamic system using an information flow that describes a development of a predictability of several future system states, comprising the steps of:

- a) measuring comparison measured data of said system and test measured data of said system;
- b) determining a comparison information flow that describes a comparison dynamic of said system using said comparison measured data;
- c) determining a test information flow that describes a test dynamic of said system using said test measured data;
- d) comparing said comparison information flow to said test information flow using said comparison information flow and said test information flow;
- e) determining said abnormality to be predicted as established when said comparison information flow differs significantly from said test information flow;
- f) determining said abnormality to be predicted as not established when said comparison information flow does not significantly differ from said test information flow.

(Please ADD new claim 18 in accordance with the following:)

Sub B4  
C1

18. (NEW) A method for predicting an abnormality of a dynamic system and for implementing a procedure in response to the abnormality, comprising:

Sub C1  
B4

training a neural network to learn the dynamics of a system;  
evaluating information received from the system;  
predicting an abnormality when the information received from the system differs significantly from normal state information as determined by the neural network; and  
implementing a procedure, if an abnormality is predicted, to prevent or treat the abnormality.